IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application. An identifier indicating the status of each claim is provided.

1. (Currently Amended) An image processing apparatus for detecting a noise exhibiting area in image data generated by decoding encoded data encoded by a frequency transform method and a lossy compression method, the image processing apparatus comprising:

motion detection means for detecting a motion vector for each pixel of said image data;

area-motion detection means for detecting at least one motion in an area having more than one pixel in said image data, based on the motion vector for each pixel detected by said motion detection means;

deviation detection means for detecting the deviation of the at least one motion in the area having at least one pixel; and

noise detection means for detecting the noise exhibiting area based on a predetermined threshold and the detected deviation; and

wherein said motion vector is computed by the expression: $V = m \times v_x + v_y$, where v_x is a horizontal component of said motion vector, v_y is a vertical component of said motion vector, m is an integer value, and v_x and v_y are in a range between $-m/2$ and $m/2$.

2. (Original) An image processing apparatus according to Claim 1, wherein said deviation detection means detects the deviation of the image motion in accordance with the deviation of the norm of the image motion.

3. (Original) An image processing apparatus according to Claim 1, wherein said deviation detection means detects said deviation of image motion in accordance with the deviation of the direction of the image motion.

4. (Original) An image processing apparatus according to Claim 1, wherein:

said motion detection means detects a motion vector as the motion; and

said deviation detection means detects the deviation of the image motion in accordance with the deviation of said motion vectors.

5. (Original) An image processing apparatus according to Claim 1, wherein:

said motion detection means detects a motion vector as the motion, converts the motion vector to a one-dimensional value as the motion, and outputs said one-dimensional value; and

said deviation detection means detects said deviation of the image motion in accordance with the deviation of said one-dimensional value.

6. (Previously Presented) An image processing apparatus according to Claim 5, wherein said noise detection means detects said noise exhibiting area by comparing the deviation value of said one-dimensional value with said predetermined threshold value.

7. (Previously Presented) An image processing apparatus according to Claim 1, further comprising:

decoding means for decoding the encoded image data encoded by the frequency transform method and the lossy compression method;

noise reduction means for reducing the amount of noise of said noise exhibiting area detected by said noise detection means; and

selective outputting means for selectively outputting one of said decoded image data from said decoding means and said image data to said noise detection means and said noise reduction means according to a control signal.

8. (Original) An image processing apparatus according to Claim 7, wherein said deviation detection means detects said deviation of the image motion in accordance with the deviation of the norm of the image motion.

9. (Original) An image processing apparatus according to Claim 7, wherein said deviation detection means detects said deviation of the image motion in accordance with the deviation of the direction of the image motion.

10. (Original) An image processing apparatus according to Claim 7, wherein:

said motion detection means detects a motion vector as the motion; and

said deviation detection means detects said deviation of the image motion in accordance with the deviation of said motion vectors.

11. (Original) An image processing apparatus according to Claim 7, wherein:

said motion detection means detects a motion vector as the motion, converts the motion vector into a one-dimensional value as the motion, and outputs said one-dimensional value; and

said deviation detection means detects said deviation of the image motion in accordance with the deviation of said one-dimensional value.

12. (Previously Presented) An image processing apparatus according to Claim 11, wherein said noise detection means detects said noise exhibiting area by comparing the deviation value of said one-dimensional value with said predetermined threshold value.

13. (Currently Amended) An image processing method for detecting a noise exhibiting area in image data generated by decoding encoded data encoded by a frequency transform method and a lossy compression method, the image processing method comprising the steps of:

detecting a motion vector for each pixel of said image data;

detecting at least one motion in an area having more than one pixel in the image data, based on the detected motion vector for each pixel;

detecting deviation of the at least one motion in the area having at least one pixel; and

detecting the noise exhibiting area based on a predetermined threshold and the detected deviation; and

wherein said motion vector is computed by the expression: $V = m \times v_x + v_y$, where v_x is a horizontal component of said motion vector, v_y is a vertical component of said motion vector, m is an integer value, and v_x and v_y are in a range between $-m/2$ and $m/2$.

14-24. (Canceled)

25. (Currently Amended) A storage medium for storing a computer-controllable program for detecting a noise exhibiting area in image data generated by decoding encoded data encoded by a frequency transform method and a lossy compression method, said computer program comprising the steps of:

detecting a motion vector for each pixel of said image data;

detecting at least one motion on an area having more than one pixel in said image data, based on the detected motion vector for each pixel;

detecting the deviation of the at least one motion on the area having at least one pixel; and

detecting the noise exhibiting area based on a predetermined threshold and the detected deviation; and

wherein said motion vector is computed by the expression: $V = m \times v_x + v_y$, where v_x is a horizontal component of said motion vector, v_y is a vertical component of said motion vector, m is an integer value, and v_x and v_y are in a range between $-m/2$ and $m/2$.

26-38. (Canceled)

39. (Previously Presented) An image processing apparatus according to claim 1, wherein said area is a block having a plurality of pixels.

40. (Previously Presented) An image processing apparatus according to claim 1, wherein said area is a unit of blocks, each of which has a plurality of pixels.

41. (Previously Presented) An image processing apparatus according to claim 1, wherein said noise exhibiting area is a pixel in the area.

42. (Previously Presented) An image processing apparatus according to claim 1, wherein said noise exhibiting area is a block having a plurality of pixels in the area.

43. (Previously Presented) An image processing apparatus according to claim 1, wherein said noise exhibiting area is a unit of blocks, each of which has a plurality of pixels in the area.

44. (Previously Presented) An image processing apparatus according to claim 1, wherein said motion detection means detects at least one motion of a pixel and a number of pixels around the respective pixel in an area in said image data, and said deviation detection means detects the deviation of the at least one motion of the respective pixel and the number of pixels in the area.

45. (Previously Presented) An image processing apparatus according to claim 1, wherein said noise detection means detects that the respective pixel is exhibiting noise when the detected deviation is greater than and equal to said predetermined threshold value and for detecting that the respective pixel is not exhibiting noise when the detected deviation is below said predetermined threshold value.

46. (Previously Presented) An image processing method according to claim 13, wherein said area is a block having a plurality of pixels.

47. (Previously Presented) An image processing method according to claim 13, wherein said area is a unit of blocks, each of which has a plurality of pixels.

48. (Previously Presented) An image processing method according to claim 13, wherein said noise exhibiting area is a pixel in the area.

49. (Previously Presented) An image processing method according to claim 13, wherein said noise exhibiting area is a block having a plurality of pixels in the area.

50. (Previously Presented) An image processing method according to claim 13, wherein said noise exhibiting area is a unit of blocks, each of which has a plurality of pixels in the area.

51. (Previously Presented) An image processing method according to claim 13, wherein the motion detecting step detects at least one motion of a pixel and a number of pixels around the respective pixel in an area in said image data, and the deviation detecting step detects the deviation of the at least one motion of the respective pixel and the number of pixels in the area.

52. (Previously Presented) An image processing method according to claim 13, wherein the noise exhibiting area detecting step detects that the respective pixel is exhibiting noise when the detected deviation is greater than or equal to said predetermined threshold value and detects that the respective pixel is not exhibiting noise when the detected deviation is below said predetermined threshold value.

53. (Previously Presented) A storage medium according to claim 25, wherein the motion detecting step detects at least one motion of a pixel and a number of pixels around the respective pixel in an area in said image data, and the deviation detecting step detects the deviation of the at least one motion of the respective pixel and the number of pixels in the area.

54. (Previously Presented) A storage medium according to claim 25, wherein the noise exhibiting area detecting step detects that the respective pixel is exhibiting noise when the detected deviation is greater than or equal to said predetermined threshold value and detects that the respective pixel is not exhibiting noise when the detected deviation is below said predetermined threshold value.